3rd International Conference on Nanomaterials Science and Mechanical Engineering

University of Aveiro, Portugal
July 7-10, 2020

Book of Abstracts

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CENTRO 2020
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9 July 2020

3rd International Conference on Nanomaterials Science and Mechanical Engineering (*online*)

9:00-9:45	**Auditorium 1** Session: **Nanotechnology** CHAIRS: Dr. Duncan Paul Fagg, Dr. Igor Bdikin ***Plenary Lecture*** Prof. Dr. Nikolai Sobolev **Ion beam modification of magnetic anisotropy, interlayer coupling and tunnel magnetoresistance in magnetic tunnel junctions** *Physics Department & i3N, University of Aveiro, 3810-193 Aveiro, Portugal*	
9:45-10:30	***Plenary Lecture*** Prof. Dr. Binay Kumar **Piezoelectric Nanoparticles Based Flexible Nanogenerators** *Crystal Lab, Department of Physics & Astrophysics, University of Delhi, India*	
10:30-11:00	Coffee break	
	Auditorium 1 Session: **Micro/Nano Materials** CHAIR: Dr. Igor Bdikin	**Auditorium 2** Session: **Manufacturing Processes and Mechanical Engineering** CHAIR: Dr. Duncan Paul Fagg
11:00-11:30	Rituparna Chatterjee (**O14**) **Structure and Luminescent Properties of Cyan emitting Eu2+-doped BaAl2O4 Nanophosphors** *School of Materials Science and Nanotechnology, Jadavpur University, Kolkata, India*	Prof. Dr. Boutahari Said (**O12**) **Statistical tolerance analysis of flexible assembly taking into account spot welding effects** *High School of Technology of Fez, University sidi mohamed ben abdellah B.P 2626 –Route d'Imouzzar, 30000 Fez, Morocco*
11:30-12:00	***Keynote talk*** Dr. Andrei Kovalevsky (**I11**) **Strontium titanate and zinc-oxide-based materials for high-temperature thermoelectric harvesting** *CICECO – Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, Portugal*	Dr. Atik Hafsa (**O16**) **Tolerance analysis of mechatronics systems** *ITS laboratory, High School of Technology, Sidi Mohamed Ben Abdellah University, Morocco*

I11. Strontium titanate and zinc-oxide-based materials for high-temperature thermoelectric harvesting

Andrei V. Kovalevsky [1, *], Kiryl V. Zakharchuk [1], Nuno M. Ferreira [2], Wenjie Xie [3], Sonia G. Patrício [1], Blanca I. Arias-Serrano[1], Sergey M. Mikhalev [4], Diogo Lopes [1], Gabriel Constantinescu [1], Sergii A. Sergiienko [1], Florinda M. Costa [2], Jorge R. Frade [1], Anke Weidenkaff [3]

[1] *CICECO – Aveiro Institute of Materials, Department of Materials and Ceramic Engineering, University of Aveiro, 3810-193 Aveiro, Portugal*

[2] *i3N, Physics Department, University of Aveiro, 3810-193 Aveiro, Portugal*

[3] *Materials and Resources, Techn, Universität Darmstadt, Alarich-Weiss Str.2, DE-64287 Darmstadt, Germany*

[4] *TEMA-NRD, Mechanical Engineering Department, Aveiro Institute of Nanotechnology (AIN), University of Aveiro, 3810-193 Aveiro, Portugal*

[*] *akavaleuski@ua.pt*

Broad societal needs have focused increased attention to providing a sustainable energy supply to the population, based on technologies with minimal environmental impact and reduced fossil fuels usage. One solution is to improve energy conversion efficiency in key consuming sectors. Since most of the energy (60-70%) used worldwide is discharged as waste heat, ”green” thermoelectric (TE) conversion has received considerable attention due to its intrinsic simplicity, employing no moving parts, silent operation, excellent scalability and reliability, and self-sufficiency to enable mobile or remote applications. In some energy-conversion scenarios, the cost and thermal stability requirements may dominate over efficiency issues, making abundant, high-temperature-stable and low-toxic oxides an interesting alternative TE material. This talk will feature some oxide-specific approaches towards tuning the thermoelectric performance in strontium titanate and zinc-oxide-based materials, including defects engineering and in-situ induced nanostructuring.